

AMENDMENTS TO THE CLAIMS  
LISTING OF CLAIMS IN THE CASE

The following listing of claims replaces all previous listing of claims:

1. (Currently Amended) A method for determining an auction format for a market, said method comprising the steps of:
  - selecting characteristics of said market;
  - selecting a relevant bidding model specifying bidding behavior as a function of information held privately by a bidder and said characteristics of said market;
  - selecting at least a first and a second estimated ~~estimating~~ a structure of said market;
  - predicting a first bidding behavior utilizing said first estimated structure of said market, said characteristics of said market and said relevant bidding model;
  - predicting a first outcome of said market based on said first bidding behavior;
  - predicting at least a second bidding behavior utilizing at least said second estimated structure of said market, said characteristics of said market and said relevant bidding model;
  - predicting a second outcome of said market based on at least said second bidding behavior; and
  - evaluating said first outcome of said market and at least said second outcome of said market to determine an auction format for said market.
2. (Previously Presented) The method as recited in Claim 1, wherein said selecting characteristics of said market step comprises the steps of:
  - receiving a first user input, wherein said first user input comprises information identifying an item to be auctioned;
  - accessing a database;
  - retrieving from said database historical bids data;
  - retrieving from said database auction characteristics data, wherein said auction characteristics comprise information relating to historical auctions of similar items;
  - outputting said historical bids data; and
  - outputting said auction characteristics data.

3. (Previously Presented) The method as recited in Claim 1, wherein said selecting a relevant bidding model step comprises the steps of:  
receiving auction characteristics data;  
accessing a database;  
retrieving from said database a relevant bidding model, wherein said bidding model is selected based on a corresponding relevance of said auction characteristics data; and  
outputting said relevant bidding model.

4. (Previously Presented) The method as recited in Claim 1, wherein said estimating a structure of said market step comprises the steps of:  
receiving said relevant bidding model;  
receiving historical bids data;  
expressing unobservable variables in terms of observable bids, wherein said unobservable variables are expressed in terms of observable bids by inverting said bid model;  
transforming said historical bids data to a sample of inverted bids, wherein said historical bids data are transformed by inverting said bid model;  
estimating an estimated latent structure of said market, wherein said sample of inverted bids receives application of statistical density estimation techniques to obtain said estimated structure; and  
outputting said estimated structure.

5. (Original) The method as recited in Claim 1, wherein said bidding model has embedded an unknown structure, and wherein said predicting a bidding behavior step comprises the steps of:  
receiving said estimated structure;  
receiving said relevant bidding model;  
substituting said estimated structure for said unknown structure; and  
outputting a prediction of bidding behavior.

6. (Original) The method as recited in Claim 1, wherein said predicting a first outcome of said market step comprises the steps of:  
receiving a second user input, wherein said second user input comprises:  
an evaluation criterion;

a candidate auction format; and  
a constraint;  
receiving said estimated structure;  
receiving said bidding behavior prediction for said candidate auction format, wherein said bidding behavior prediction further comprises a prediction under said constraint;  
obtaining a value of said evaluation criterion, wherein said value is based on said estimated structure, said bidding behavior prediction, said candidate auction format, and said constraint, said value comprising said first predicted outcome; and  
outputting said value.

7. (Original) The method as recited in Claim 1, wherein said evaluating said first outcome of said market step comprises the steps of:  
receiving a third user input, wherein said third user input comprises a plurality of candidate auction formats;  
receiving a predicted outcome for each said candidate auction format;  
calculating descriptive statistics for each said candidate auction format, wherein said descriptive statistics comprise a mean and a variance;  
ranking each said candidate auction format with respect to said calculated mean and generating corresponding rankings for said plurality;  
and  
outputting said descriptive statistics and said rankings.

8. (Original) The method as recited in Claim 7, wherein said evaluating said first outcome of said market step further comprises the steps of:  
selecting a best auction format, wherein said best auction format comprises the candidate auction format within said plurality having the highest said ranking; and  
outputting said best auction format.

9. (Currently Amended) A computer system comprising:  
a bus;  
a memory interconnected with said bus; and

a processor interconnected with said bus, wherein said processor executes a method for determining an auction format for a market, said method comprising the steps of:

- selecting characteristics of said market;
- selecting a relevant bidding model specifying bidding behavior as a function of information held privately by a bidder and said characteristics of said market;
- selecting at least a first and a second estimated ~~estimating~~ a structure of said market;
- predicting a first bidding behavior utilizing said first estimated structure of said market, said characteristics of said market and said relevant bidding model;
- predicting a first outcome of said market based on said first bidding behavior;
- predicting at least a second bidding behavior utilizing at least said second estimated structure of said market, said characteristics of said market and said relevant bidding model;
- predicting a second outcome of said market based on at least said second bidding behavior; and
- evaluating said first outcome of said market and at least said second outcome of said market to determine an auction format for said market.

10. (Previously Presented) The system as recited in Claim 9, wherein said selecting characteristics of said market step of said method comprises the steps of:

- receiving a first user input, wherein said first user input comprises information identifying an item to be auctioned;
- accessing a database;
- retrieving from said database historical bids data;
- retrieving from said database auction characteristics data, wherein said auction characteristics comprise information relating to historical auctions of similar items;
- outputting said historical bids data; and
- outputting said auction characteristics data.

11. (Previously Presented) The system as recited in Claim 9, wherein said selecting a relevant bidding model step of said method comprises the steps of:

receiving auction characteristics data;  
accessing a database;  
retrieving from said database a relevant bidding model, wherein said bidding model is selected based on a corresponding relevance of said auction characteristics data; and  
outputting said relevant bidding model.

12. (Previously Presented) The system as recited in Claim 9, wherein said estimating a structure of said market step of said method comprises the steps of:

receiving said relevant bidding model;  
receiving historical bids data;  
expressing unobservable variables in terms of observable bids, wherein said unobservable variables are expressed in terms of observable bids by inverting said bid model;  
transforming said historical bids data to a sample of inverted bids, wherein said historical bids data are transformed by inverting said bid model;  
estimating an estimated latent structure of said market, wherein said sample of inverted bids receives application of statistical density estimation techniques to obtain said estimated structure; and  
outputting said estimated structure.

13. (Original) The system as recited in Claim 9, wherein said bidding model has embedded an unknown structure, and wherein said predicting a bidding behavior step of said method comprises the steps of:

receiving said estimated structure;  
receiving said relevant bidding model;  
substituting said estimated structure for said unknown structure; and  
outputting a prediction of bidding behavior.

14. (Original) The system as recited in Claim 9, wherein said predicting a first outcome of said market step of said method comprises the steps of:

receiving a second user input, wherein said second user input comprises:  
  
an evaluation criterion;  
a candidate auction format; and  
a constraint;

receiving said estimated structure;  
receiving said bidding behavior prediction for said candidate auction format, wherein said bidding behavior prediction further comprises a prediction under said constraint;  
obtaining a value of said evaluation criterion, wherein said value is based on said estimated structure, said bidding behavior prediction, said candidate auction format, and said constraint, said value comprising said first predicted outcome; and  
outputting said value.

15. (Original) The system as recited in Claim 9, wherein said evaluating said first outcome of said market step of said method comprises the steps of:  
receiving a third user input, wherein said third user input comprises a plurality of candidate auction formats;  
receiving a predicted outcome for each said candidate auction format;  
calculating descriptive statistics for each said candidate auction format, wherein said descriptive statistics comprise a mean and a variance;  
ranking each said candidate auction format with respect to said calculated mean and generating corresponding rankings for said plurality;  
and  
outputting said descriptive statistics and said rankings.

16. (Original) The system as recited in Claim 15, wherein said evaluating said first outcome of said market step of said method further comprises the steps of:  
selecting a best auction format, wherein said best auction format comprises the candidate auction format within said plurality having the highest said ranking; and  
outputting said best auction format.

17. (Currently Amended) A computer readable medium for causing a computer system to execute the steps in a method for determining a auction format for a market, said method comprising the steps of:  
selecting characteristics of said market;  
selecting a relevant bidding model specifying bidding behavior as a function of information held privately by a bidder and said characteristics of said market;

selecting at least a first and a second estimated ~~estimating~~ a structure of said market;

predicting a first bidding behavior utilizing said first estimated structure of said market, said characteristics of said market and said relevant bidding model;

predicting a first outcome of said market based on said first bidding behavior;

predicting at least a second bidding behavior utilizing at least said second estimated structure of said market, said characteristics of said market and said relevant bidding model;

predicting a second outcome of said market based on at least said second bidding behavior; and

evaluating said first outcome of said market and at least said second outcome of said market to determine an auction format for said market.

18. (Previously Presented) The computer readable medium as recited in Claim 17, wherein said selecting characteristics of said market step of said method comprises the steps of:

receiving a first user input, wherein said first user input comprises information identifying an item to be auctioned;

accessing a database;

retrieving from said database historical bids data;

retrieving from said database auction characteristics data, wherein said auction characteristics comprise information relating to historical auctions of similar items;

outputting said historical bids data; and

outputting said auction characteristics data.

19. (Previously Presented) The computer readable medium as recited in Claim 17, wherein said selecting a relevant bidding model step of said method comprises the steps of:

receiving auction characteristics data;

accessing a database;

retrieving from said database a relevant bidding model, wherein said bidding model is selected based on a corresponding relevance of said auction characteristics data; and

outputting said relevant bidding model.

20. (Previously Presented) The computer readable medium as recited in Claim 17, wherein said estimating a structure of said market step of said method comprises the steps of:

- receiving said relevant bidding model;
- receiving historical bids data;
- expressing unobservable variables in terms of observable bids, wherein said unobservable variables are expressed in terms of observable bids by inverting said bid model;
- transforming said historical bids data to a sample of inverted bids, wherein said historical bids data are transformed by inverting said bid model;
- estimating an estimated latent structure of said market, wherein said sample of inverted bids receives application of statistical density estimation techniques to obtain said estimated structure; and
- outputting said estimated structure.

21. (Original) The computer readable medium as recited in Claim 17, wherein said bidding model has embedded an unknown structure, and wherein said predicting a bidding behavior step of said method comprises the steps of:

- receiving said estimated structure;
- receiving said relevant bidding model;
- substituting said estimated structure for said unknown structure; and
- outputting a prediction of bidding behavior.

22. (Original) The computer readable medium as recited in Claim 17, wherein said predicting a first outcome of said market step of said method comprises the steps of:

- receiving a second user input, wherein said second user input comprises:
  - an evaluation criterion;
  - a candidate auction format; and
  - a constraint;
- receiving said estimated structure;
- receiving said bidding behavior prediction for said candidate auction format, wherein said bidding behavior prediction further comprises a prediction under said constraint;



obtaining a value of said evaluation criterion, wherein said value is based on said estimated structure, said bidding behavior prediction, said candidate auction format, and said constraint, said value comprising said first predicted outcome; and  
outputting said value.

23. (Original) The computer readable medium as recited in Claim 17, wherein said evaluating said first outcome of said market step of said method comprises the steps of:

receiving a third user input, wherein said third user input comprises a plurality of candidate auction formats;

receiving a predicted outcome for each said candidate auction format;  
calculating descriptive statistics for each said candidate auction format, wherein said descriptive statistics comprise a mean and a variance;

ranking each said candidate auction format with respect to said calculated mean and generating corresponding rankings for said plurality;  
and

outputting said descriptive statistics and said rankings.

24. (Original) The computer readable medium as recited in Claim 23, wherein said evaluating said first outcome of said market step of said method further comprises the steps of:

selecting a best auction format, wherein said best auction format comprises the candidate auction format within said plurality having the highest said ranking; and

outputting said best auction format.